

Serial No. 09/761,317

March 8, 2004

Reply to the Office Action dated December 9, 2003

Page 8 of 13

REMARKS/ARGUMENTS

Claims 1-20 and 25-32 are pending in this application. By this Amendment, Applicants AMEND claims 1, 7, 13, and 17 and ADD claims 27-32.

Claims 1, 3, 4, 6, 7, 9, 10, 12, 13, 16, 17, and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Baigetsu (US 5,080,763). Claims 1-3, 6-9, 12, 13, 16, 17, 20, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Arikawa et al. (JP 02-139934). Claims 1-20 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirano et al. (US 5,550,068) in view of the Applicants' Admitted Prior Art (AAPA), and further in view of Hayashi (US 5,336,929). Claims 1 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Takashi (JP 06-260482) in view of AAPA. Applicants respectfully traverse the rejection of claims 1-20, 25, and 26.

Claim 1 has been amended to recite:

"A method of wiring formation comprising the steps of:
forming a feeder film partially on a substrate;
**forming on the substrate a plating base film such that the
plating base film partially overlaps the feeder film;**
forming a plated wiring on the plating base film; and
**selectively removing at least a portion of the feeder film that is
exposed from the plated wiring such that the feeder film under the
plating base film remains."** (emphasis added)

Applicants' claim 1 recites the steps of "forming on the substrate a plating base film such that the plating base film partially overlaps the feeder film" and "selectively removing at least a portion of the feeder film that is exposed from the plated wiring such that the feeder film under the plating base film remains." Applicants' claims 7, 13, and 17 recites features which are similar to features recited in Applicants' claim 1, including the above emphasized features. In addition, new claim 27 recites features that are similar to the features recited in claim 1. With the improved features of claims 1, 7, 13, 17 and 27, Applicants have been able to provide a method of wiring formation wherein fine wiring is accurately formed by the semi-additive process using wet etching to

Serial No. 09/761,317

March 8, 2004

Reply to the Office Action dated December 9, 2003

Page 9 of 13

remove the feeder film (see, for example, the second full paragraph on page 3 of the originally filed specification).

Applicants agree with the Examiner's statement in paragraph no. 2 on page 2 of the outstanding Office Action that "Baigetsu does not particularly disclose that the base or barrier layer is only partially formed on the feeder layer." The Examiner further alleged that "since [a] barrier layer is required only under the gold wiring layer[,] it would have been obvious to have [a] barrier layer only partially formed."

However, Applicants' claim 1 recites the step of "forming on the substrate a plating base film such that the plating base film partially overlaps the feeder film" (emphasis added). Applicants' claims 7, 13, 17 and 27 recite a similar step. That is, Applicants' claims 1, 7, 13, 17 and 27 require that a portion of the plating base film overlaps the feeder film and that both the plating base film and the feeder film are formed on the substrate. The Examiner has completely failed to explain why one of ordinary skill in the art would have formed both of the Ti and Pd layers 6 of Baigetsu on the insulating layer 4 such that one of the Ti and Pd layers 6 partially overlaps the other layer.

Thus, contrary to the Examiner's allegation, Baigetsu fails to teach or suggest the step of "forming on the substrate a plating base film such that the plating base film partially overlaps the feeder film" as recited in Applicants' claims 1 and similarly in Applicants' claims 7, 13, 17 and 27.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1, 7, 13, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Baigetsu.

Applicants agree with the Examiner's statement in the second paragraph on page 3 of the outstanding Office Action that "Arikawa et al[,] do not particularly disclose that the base or barrier layer is only partially formed on the feeder layer." Again, the Examiner further alleged that "since [a] barrier layer is required only under the gold wiring layer[,] it would have been obvious to have [a] barrier layer only partially formed."

Serial No. 09/761,317

March 8, 2004

Reply to the Office Action dated December 9, 2003

Page 10 of 13

As noted above, Applicants' claims 1, 7, 13, 17 and 27 require that a portion of the plating base film overlaps the feeder film and that both the plating base film and the feeder film are formed on the substrate. Arikawa et al. clearly fails to teach or suggest the feature of either the Pt layer 4 or the Au layer 5 being formed on the substrate and partially overlapping the Ti layer 3.

Thus, contrary to the Examiner's allegation, Arikawa et al. fails to teach or suggest the step of "forming on the substrate a plating base film such that the plating base film partially overlaps the feeder film" as recited in Applicants' claims 1 and similarly in Applicants' claims 7, 13, 17 and 27.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1, 7, 13, and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Arikawa et al.

Applicants have amended claims 1, 7, 13, and 17 to recite the step of "selectively removing at least a portion of the feeder film that is exposed from the plated wiring such that the feeder film under the plating base film remains." Claim 27 recites the step of "selectively removing at least a portion of the feeder film that is exposed from the plated wiring such that the feeder film under the plating base film is completely removed." None of Hirano et al., AAPA, and Hayashi teaches or suggests these features.

First, as argued in the previous Amendment dated October 14, 2003, it is the Applicants' position that Hirano et al. fails to teach or suggest the step of removing the circuit means 2 as alleged by the Examiner.

Assuming *arguendo* that Hirano et al. teaches removal of the circuit means 2 as suggested by the Examiner, Hirano et al. clearly fails to teach or suggest the step of removing only a portion of the circuit means 2 and, certainly, fails to teach or suggest the step of removing the circuit means 2 such that the circuit means 2 under the conductive layer 11 remains or the step of removing the circuit means 2 such that the circuit means 2 under the conductive layer 11 is completely removed. Thus, Hirano et al. fails to teach or suggest the step of "selectively removing at least a portion of the

Serial No. 09/761,317

March 8, 2004

Reply to the Office Action dated December 9, 2003

Page 11 of 13

feeder film that is exposed from the plated wiring such that the feeder film under the plating base film remains" as recited in Applicants' claims 1, 7, 13, and 17 or the step of "selectively removing at least a portion of the feeder film that is exposed from the plated wiring such that the feeder film under the plating base film is completely removed" as recited in Applicants' claim 27.

Second, the Examiner has relied upon AAPA and Hayashi to allegedly cure various deficiencies in Hirano et al. However, the Examiner has failed to provide any motivation for selectively removing only a portion of the circuit means 2 of Hirano et al. and, has certainly failed to provide motivation for selectively removing the circuit means 2 of Hirano et al. such that the circuit means 2 under the conductive layer 11 remains. Thus, Hirano et al., AAPA, and Hayashi cannot be combined to teach or suggest the feature of "selectively removing at least a portion of the feeder film that is exposed from the plated wiring such that the feeder film under the plating base film remains" as recited in Applicants' claims 1, 7, 13, and 17 or the step of "selectively removing at least a portion of the feeder film that is exposed from the plated wiring such that the feeder film under the plating base film is completely removed " as recited in Applicants' claim 27 because the Examiner has failed to provide any motivation for combining the references.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1, 7, 13, and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano et al. in view of the AAPA, and further in view of Hayashi.

The Examiner has further alleged in the paragraph bridging pages 5 and 6 of the outstanding Office Action that both reference numbers 2 and 4 of Takashi teach the feeder film recited in Applicants' claim 1. However, reference numbers 5c and 5 of Takashi, which the Examiner has alleged teaches the plating base film recited in Applicants' claim 1, are clearly **NOT** formed on substrate 1. Thus, contrary to the Examiner's allegations, Takashi fails to teach or suggest the feature of "forming on the substrate a plating base film such that the plating base film partially overlaps the feeder

Serial No. 09/761,317

March 8, 2004

Reply to the Office Action dated December 9, 2003

Page 12 of 13

film" as recited in Applicants' claim 1.

In addition, the Examiner has relied upon AAPA to allegedly cure various deficiencies in Takashi. However, AAPA fails to teach or suggest the use of a plating base film. Thus, AAPA clearly fails to teach or suggest the feature of forming on the substrate a plating base film such that the plating base film partially overlaps the feeder film" as recited in Applicants' claim 1.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 were rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi in view of AAPA.

Accordingly, Applicants respectfully submit that none of the prior art of record, applied alone or in combination, teaches or suggests the unique combination of features and method steps recited in claims 1, 7, 13 and 17 of the present application. Claims 2-6, 25, and 26 depend upon claim 1 and are therefore allowable for at least the reasons that claim 1 is allowable. Claims 8-12 depend upon claim 7 and are therefore allowable for at least the reasons that claim 7 is allowable. Claims 14-16 depend upon claim 13 and are therefore allowable for at least the reasons that claim 13 is allowable. Claims 18-20 depend upon claim 17 and are therefore allowable for at least the reasons that claim 17 is allowable.

In addition, Applicants respectfully submit that none of the prior art of record, applied alone or in combination, teaches or suggests the unique combination of features and method steps recited in claim 27. Claims 28-32 depend upon claim 27 and are therefore allowable for at least the reasons that claim 27 is allowable.

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

Serial No. 09/761,317

March 8, 2004

Reply to the Office Action dated December 9, 2003

Page 13 of 13

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Date: March 8, 2004


Attorneys for Applicants

Joseph R. Keating
Registration No. 37,368

Christopher A. Bennett
Registration No. 46,710

KEATING & BENNETT LLP
10400 Eaton Place, Suite 312
Fairfax, VA 22030
Telephone: (703) 385-5200
Facsimile: (703) 385-5080